

Observations sur les Abeilles' in an English dress in 1806, we know of no treatise on the subject equal to the 'Honey-Bee' for accuracy of information in respect to the natural history of the insect and minuteness of practical detail.

The work is divided into two parts, of the first of which nearly 50 pages are occupied with a general view of the history and physiology of the bee, as far as relates to the personal description of the three essential members of the bee community, viz. the queen, the worker, and the male or drone, particularly as respects the impregnation of the queen, the effects of its retardation, and the laying and hatching of the eggs. The author then proceeds to give detailed instructions for the practical management of the bee, comprehending descriptions of the œconomy of the apiary, of the best form of hives, of the mode of proceeding during the season of swarming, of feeding, protecting, and transporting the bees at the proper periods, and of the manipulation of honey and wax.

In Part II. Dr. Bevan gives an account of the anatomy of the bee; enters into a more enlarged detail of its physiology than had been given in Part I., and discusses at considerable length, and with great perspicuity, the senses, instincts, and the wonders of its architecture.

The work is distinguished by sound philosophical views, and is written in a style of classical elegance and simplicity. The author professes not to offer much in the way of original discovery, but to give a popular view of the present state of apiarian knowledge, historical, physiological, and practical; and that he has succeeded in his object, the well-deserved popularity of his book, and the consequent call for a new edition, furnish abundant evidence. The first edition was deficient in point of arrangement; this has been satisfactorily remedied: many particulars connected with the natural history of the insect, formerly stated but briefly, have been enlarged or modified conformably with the more advanced state of the science, and some additional directions have been given as to practical management, which well deserve the attention of the bee-master.

*Plantæ Javanicæ Rariores, descriptæ iconibusque illustratæ, quas in Insula Java, annis 1802—1818, legit et investigavit T. Horsfield, M.D. e siccis descriptiones et characteres plurimarum elaboravit J. J. Bennett; observationes structuram et affinitates præsertim respicientes passim adjecit R. Brown.* Part I.—Allen and Co., Leadenhall Street, 1838.

[Continued from p. 222.]

The twelfth article relates to *Conocephalus suaveolens*, Bl., a genus referrible to Mr. Brown's family of *Artocarpeæ*, and nearly related

to the *Coussapou* of Aublet. With this genus Mr. Bennett compares it, as also with *Cecropia* and *Musanga*, a genus indicated by Mr. Brown in the Appendix to Captain Tuckey's Narrative; and after noticing the characters common to all the genera named, proceeds to give their generic distinctions, all of them except *Cecropia* being but little known, and one of them (*Musanga*) not having been previously described. He adds also the characters of the male flowers of the genus *Myrianthus* of Palisot de Beauvais, with the double view of affording materials for comparison with those of *Musanga*, (to which Mr. Brown long since pointed out their resemblance), and of introducing a correction in those given by M. de Beauvais. He refers to M. Gaudichaud's classification of *Urticeæ*, in which *Conoccephalus* is widely misplaced; and incidentally observes that the *Hedyccarya* of Forster, referred by M. Gaudichaud to *Artocarpeæ*, "is much more nearly related to that very distinct division of the class (as *Urticeæ* are now, in accordance with Mr. Brown's views, generally considered) which was long since separated by Jussieu under the name of *Monimieæ*."

The thirteenth article contains a long historical notice of the *Antiaris toxicaria*, Lesch., the celebrated *Upas* or Poison-tree of Java, on the subject of which so many marvellous tales have long passed current. Mr. Bennett traces the history of this poison through a long succession of writers, from De Bry's 'India Orientalis,' down to the most recent times, including among many other of the older names, those of Herbert, Bontius, Tavernier, Nieuhof, Spielman, Kamel, Kæmpfer, Valentyn, and Rumphius; all of whom relate, either from their own observation or on the testimony of natives of Macassar, Java, Luçon and the Moluccas, various particulars concerning it. In these accounts much of truth and no little falsehood are mingled together; "quis enim," as Kæmpfer observes, "quicquam ex Asiaticorum ore referat, quod figmentis non implicetur?" In all these cases, indeed the falsehood may fairly be traced to the extravagant assertions of ignorant or interested natives, and implies in the authors named no greater blame than that of a credulity common to the age in which they lived. Not so in the narrative of Færsch, by which the fabulous history of the tree has been most widely spread, and which has since been demonstrated to be, from beginning to end, a tissue of inventions, founded on the absurd and marvellous stories current among the natives, and scarcely relieved by a single particle of truth, except the fact (then for the first time stated, but long afterwards considered doubtful) that the tree grows in the island of Java. The inquiries of travellers were, however,

stimulated by the sensation produced by this impudent fabrication, but their researches remained for some time fruitless ; and it was reserved for M. Deschamps, M. Leschenault, Dr. Horsfield, and more recently Dr. Blume, to supply us with authentic information on the subject. An abstract of the information thus obtained (with the exception of that contained in Dr. Blume's valuable dissertation, which did not appear until some time after this article was written) ; and a notice of some of the experiments made with the poison by Sir Benjamin Brodie and others, and of its chemical analysis by MM. Pelletier and Caventou, complete the history of the Antiar as here given by Mr. Bennett. A few words are added on the subject of the botanical affinities of the genus, together with some remarks on the distinctive characters of the two species which are known to belong to it.

*Pouzolzia pentandra*, described by Mr. Bennett in the succeeding article, belongs to one of the generic (or probably rather subgeneric) divisions of *Parietaria*, distinguished by M. Gaudichaud, in his sketch of a classification of *Urticeæ*. The species of *Pouzolzia*, which are numerous, are again capable of subdivision into two very distinct and natural sections, dependent on the development or non-development of wings on the fructiferous calyx. Of the species of the winged section known to him, which are nine in number, Mr. Bennett gives a synopsis, and offers some observations on those of the sulcated and wingless group, and on the species indicated by M. Gaudichaud. He refers to the terms employed by M. Gaudichaud in characterizing his sections of true *Urticeæ* as indicative of the belief of that author in the existence of a second point of attachment of the ovulum at its apex ; and states that "the supposed superior point of attachment of the ovulum has always proved, on a close examination, to be merely a membranous and somewhat tubular elongation of the margin of the testa surrounding the aperture, which is thus placed in close and immediate contact with the base of the style," and in which he has "never been able to perceive the slightest trace of a vascular connexion." He also notices an oversight of Professor Lindley in describing the entire family of *Urticeæ*, as having the "radicle always pointing to the hilum," the contrary structure being well known to exist in the great majority of the genera ; and concludes by pointing out some analogical resemblances between *Pouzolzia*, and certain genera of *Polygoneæ* and *Chenopodeæ*.

In the article which follows, on *Gunnera macrophylla*, Bl., Mr. Bennett gives a history of the genus, and adverts to the singular variety of errors to which it has at various times given rise, as regards

its structure and classification, both in the Linnæan and natural system. "The description of *Gunnera macrophylla* and the accompanying figure," he observes, "abundantly prove that the affinities of the genus have been altogether misunderstood, and that it bears at most but a distant relation to *Urticæ*, from which it differs in almost every important feature except its solitary seed. It seems indeed surprising that a genus known to possess 'germen inferum,' should have been so long referred to an order in which, even where a partial adhesion takes place of the calyces *inter se*, as in *Artocarpus*, not the smallest tendency exists to their adhesion with the ovaria. But when to this we add the presence of distinct petals, the removal of the genus not only from the order, but also from the class to which that order is referred, is clearly indicated." On the subject of its real affinities, Mr. Bennett adds that Mr. Brown communicated to him in 1835 some highly curious and interesting views, into the detail of which he was precluded from entering by Mr. Brown's absence from England while this article was passing through the press; and expresses a hope that he will himself hereafter make them fully known. A synopsis of the known species of *Gunnera* completes the account of this interesting plant.

A curious Piperaceous genus, to which Dr. Blume has given the name of *Zippelia*, chiefly remarkable on account of the glochidiate prickles with which its berries are muricated throughout, forms the subject of the sixteenth article. In it Mr. Bennett makes some observations on the question, now no longer doubtful, of the monocotyledonous or dicotyledonous character of the embryo of the genus *Piper*; and notices some of the obscure genera which have been described as belonging to this restricted family.

*Tetrameles nudiflora*, the only known species of a genus named and characterized by Mr. Brown in the Appendix to Denham's Narrative, forms the subject of the succeeding article. Along with *Datisca* it constitutes "an order very different from any other yet established," to which Mr. Brown has given the name of *Datisceæ*. The difference between the two genera in habit and in some minor points of structure is considerable; but in all essential particulars they are most intimately allied. Mr. Bennett incidentally observes that the supposed second species of *Datisca*, described by Linnæus under the name of *Datisca hirta*, belongs unquestionably to the genus *Rhus*, the specimen in the Linnæan Herbarium being most probably only a contracted specimen of the common *Rhus typhina*.

In the next article, under the head of *Helicia Javanica*, Mr. Bennett illustrates the history and characters of a Proteaceous genus,

established by Loureiro, and now consisting of eleven species, of which a synopsis is here given. It comprehends all the Asiatic *Proteaceæ* at present known.

The nineteenth and twentieth articles relate to two species of *Rhododendrum*, of which Dr. Blume had formed a genus under the name of *Vireya*. Mr. Bennett states, however, that they do not differ in any respect from the former genus. The first described, *Rhod. Javanicum*, is intimately related to *Rhod. Ponticum*, but has larger and more showy flowers; its flowers indeed are the largest in the genus. The second, *Rhod. retusum*, belongs to the same division of the genus with *Rhod. ferrugineum*. In describing them Mr. Bennett speaks of "what is usually regarded as a capitate stigma as an indusium surrounding the true stigmata, which are distinct from each other, equal in number to the cells of the ovarium, partially or wholly adherent to the inner surface of the indusium, sometimes slightly projecting beyond it, and generally a little capitate;" and states that Mr. Brown long since showed him "that a similar organization, more or less obvious, occurs very generally in the family, demonstrating it more particularly in *Salaxis*, and such of the other Heaths as are commonly described as having a large peltate stigma." This structure he regards as bearing an obvious relation to the more strongly marked indusium of *Goodenovicæ*.

In the next article Mr. Bennett characterizes a new genus of *Asclepiadeæ*, nearly related to *Hoya*, but differing from it in some striking, if not very essential, characters. To this genus he gives the name of *Cyrtoceras*, and derives its principal distinctive character "from the great comparative elongation of the whole of its sexual apparatus, which in *Hoya* is as remarkably depressed." We may add that it is the *Centrostemma* of M. Decaisne, since published in the 'Annales des Sciences Naturelles,' Nouv. Série, tom. ix. p. 271.

In the twenty-second article Mr. Bennett describes a species of the genus *Argostemma* of Dr. Wallich, which M. De Candolle has placed in immediate apposition with *Ophiorhiza*, but which Mr. Bennett considers, in accordance with a suggestion of Mr. Brown, to be much more closely related to *Hoffmannia*. He enters into a detailed examination of the more remarkable characters of the genus, and gives a synopsis of the species at present known, twenty-one in number, of which thirteen are here characterized for the first time.

The twenty-third article offers a striking instance of one of those fortunate recoveries of lost plants, which sometimes reward the labours of the botanist far more agreeably than the discovery of new. It relates to the Linnæan genus *Lerchæa*, which having entirely escaped

the observation of later writers, has been recently discarded even from the lists of genera published by Dr. Bartling and Professor Lindley. Notwithstanding some curious errors in the Linnæan character, one of which led to a singular misplacement of it in the Linnæan system, Mr. Brown satisfied himself of the identity of Dr. Horsfield's plant, with that described by Linnæus, long before he found the latter in the Linnæan Herbarium, in which no specimen existed in its proper place or under its published name. He afterwards discovered, however, among the unarranged plants of that collection two several specimens, one of them accompanied by a MS. generic character under the name of *Codaria*; and both in all respects identical with the plant here figured and described. To the rediscovery of the plant must be added that of its true place in the natural system, which had never even been suspected, the errors of the Linnæan character offering an apparently fatal objection to its position among *Rubiaceæ*, where it will henceforward take its place in the neighbourhood of *Wendlandia*. With this genus, and with the *Xanthophytum* of Dr. Blume, Mr. Bennett compares it, and states that he is strongly inclined to regard it as identical with a species originally referred by that author to *Chiococca*, but since transferred by him to *Xanthophytum*. He describes its most remarkable peculiarity as consisting "in the large size and occasional cohesions of its epigynous disk. This disk, which in the early stage forms merely a thickened fleshy ring surrounding the base of the style, and free from any adhesion to the corolla, gradually enlarges in most cases so as completely to fill the lower half of the tube of the corolla, with the thickened and narrowed part of which it at length occasionally coheres below the point of insertion of the anthers, and even sometimes becomes adherent with the latter at their base, as well as with the portion of the style which it surrounds. More commonly these adhesions do not take place; and the fleshy disk is sometimes little or not at all developed beyond its original size."

In the twenty-fourth article Mr. Brown describes, under the name of *Loxotis obliqua*, an elegant little plant of the tribe of *Cyrtandraceæ*, found by himself in the Island of Timor near Coepang in the year 1803, and since collected by Dr. Horsfield and probably also by Dr. Blume in many parts of Java. To the genus Mr. Brown had originally given in his MSS. the name now adopted, but afterwards changed it, on the request of Mr. Ferdinand Bauer (whose drawing, made on the spot, furnishes the materials for a most beautiful plate) for that of *Antonia*, under which it was introduced by Mr. Bauer into a celebrated flower-piece, painted in honour of the late Baron

Jacquin. But the latter name, although well known to the Vienna botanists, having been since applied by Pohl to a South American genus, it has become necessary to recur to that originally given, which may also possibly be set aside if (as there is reason to suspect) the genus should prove to be identical with the *Rhincoglossum* of Dr. Blume. "With regard to the genus itself," Mr. Brown observes, "it may be doubted whether *Loxotis* and *Glossanthus* ought to be generically distinguished merely or chiefly on account of the difference in the number of their antheriferous stamina, especially as they entirely agree in habit, in which there is something peculiar. It is not a little remarkable, that in some of the more minute and less important differences between them, the intermediate structure or connecting link should be found in a species sent by Dr. Schiede from Mexico (*Glossanthus Mexicana*, Br. ined.) and that this should be the only plant belonging to *Cyrtandraceæ* hitherto observed in any part of America."

The twenty-fifth plate, the last of the present part, represents another plant of the same tribe, *Loxonia acuminata*, the letter-press relating to which is postponed to the succeeding part.

Under the head of each plant, Dr. Horsfield has furnished valuable information as to its habit, growth and uses; the precise localities in which it was found by him, particularly noting the height above the level of the ocean; its native name, and such other particulars as his long residence in Java enabled him to collect.

## PROCEEDINGS OF LEARNED SOCIETIES.

### ZOOLOGICAL SOCIETY.

March 27th, 1838.—William Yarrell, Esq., in the Chair.

A Dugong preserved in spirit having been presented to the Museum by Alexander John Kerr, Esq., of Penang, Mr. Owen communicated to the meeting some notes descriptive of the principal *viscera* in this remarkable aquatic mammal, and a statement of the relative proportions exhibited by its several parts, in comparison with the dimensions of a Dugong published by Sir Stamford Raffles in the Phil. Trans., 1820, and of two other specimens which Mr. Owen had on previous occasions examined in the Society's collection. From these notes, as given in No. 63 of the Society's 'Proceedings,' the following are extracts.

Mr. Owen remarks, that "The external form of the Dugong is not so well calculated for moving rapidly through the water as that